The Influence of Social Media on Exercise Intention: A Case Study of Millennials in Taiwan

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Abstract

In this study the impact of social media on the intention of millennials to exercise was explored. Factors including social norms, recognition, exercise imagery, and subjective exercise knowledge, viewed from a social media context, can influence the intention to exercise. Subjective norms, attitude, perceived behavioral control, and intention were variables considered under the Theory of Planned Behavior. An online survey was used to collect information from 440 respondents comprising both university students and members of public sport centers in Taipei, Taiwan. Structural Equation Modeling was used to analyze the data. The results indicated that social norms, recognition, and subjective exercise knowledge from social media positively impacted millennial's intentions to exercise. These findings can be used to develop effective marketing strategies in the fitness industry by customizing for the different factors listed previously. Future studies should determine the differences that may exist among members of different demographic groups and in different forms of social media.

Keywords: *Social media, exercise intention, planned behavior, millennials*

Introduction

With the constant improvement of technology, new developments–as well as inventions–are infiltrating our lives, including the ways that we shop, the jobs we undertake, and even the ways we communicate with friends. Undoubtedly, technology is changing the ways we behave. According to recent research, 3.8 billion people are already active social media users, nearly 49% of the world's population. The highest social media penetration in the world is in Eastern Asia (Kemp, 2020), which contains 71% of the population. And Eastern Asia is also where Taiwan is located. Up to 88% of the population in Taiwan is active on social media. On average they spend two hours per day using social media. In Taiwan, YouTube and Facebook are ranked the top two frequently used platforms with 89% of Internet users, while Line is ranked third with 86% of users. Instagram is in fifth place, being used by 54% of individuals, and is gaining popularity among young people (Kemp, 2020). For Taiwanese users, videos and image-related postings are two of the most frequently shared content types on social media platforms (Leads to Success, 2020). People aged 25 to 34 and 35 to 44 are the two top age groups which are active on social media in Taiwan. Hence, millennials aged 20 to 40 years old are the major users engaged in social media activities in Taiwan.

Many researchers have pointed out that media usage has a significant impact on health and exercise-related beliefs and perceptions, especially for those who frequently use social network sites (Burke & Rains, 2018). Social networking sites provide a great channel for people to share their messages with diverse and creative features (Bolton et al., 2013). For example, exercise and health-related content is shared, such as people's fitness habits, skills, and diet plans (Burke & Rains, 2018). These researchers' study showed that those who regularly came into contact with fitness-related social media content had an increased awareness of weight control.

Social media has become a user-generated content platform to search and create information. Many fitness companies have begun to adopt social media marketing within their marketing plans. According to research findings, 65% of people are inclined to visual learning (Bradford, 2004). Most people believe that they need to witness the correctness of the promoted content. Visual presentation helps the memorizing and learning process. Thus, most content on social media is presented in the form of videos or short clips to catch viewers' attention and make it easier to fix messages and ideas in the audience's brains. Therefore, more and more companies in the fitness

industry transmit fitness-related video content via social media. They hope to increase people's awareness of health and exercise to make people more willing to engage in exercise activities.

The purpose of this study was to find answers to the following research questions:

1. How does social media influence the exercise intention of millennials?
2. What is the relationship among exercise intention, subjective norms, attitude, and perceived behavioral control?

The main objectives of this study were as follows:

1. To examine how social media factors (social norms, recognition, exercise imagery, subjective exercise knowledge) influence millennials' subjective norms, attitude, and perceived behavioral control in exercise.
2. To investigate how subjective norms, attitude, and perceived behavioral control affect the exercise intention of millennials.

Literature Review
The Usage of Social Media on Millennials

A generation is usually known as a group of individuals who display a set of similar characteristics. Each generation usually has a similar perspective toward certain issues or events (Bolton et al., 2013). Millennials are commonly mentioned in studies. They are mostly students or recent entrants to the workplace. We define a millennial as an individual born between 1980 and 2000 (Tan & Ng, 2015). Millennials are also called "Generation Y," "Digital Natives," "Echo Boomers," or "iGeneration," since they were the first group of people that really grew up in the digital environment (Radzi et al., 2018). They are considered masters of using technology and the Internet. The members of this group spend most of their time using all these technologies to finish multiple tasks in their everyday lives.

One of the most significant phenomena displayed by millennials is the wide usage of social media platforms. Members of this generation use social media for many reasons, such as receiving information, fulfilling their casual or entertainment demands, and as a tool for socializing. Due to the convenience of using these techniques, millennials are influenced in their purchasing behavior through these digital channels. Therefore, as a result they may show a higher spending power than other generations on items that are advertised creatively through these media using wording that resonates with their values (Kim et al., 2017). Millennials have also been shown to be prone to maintaining strong connections with friends, family members, and reference groups through offline and online channels (Koufie & Kesa, 2020). They are eager to express their opinions, knowledge, and even emotions through sharing information and experiences online. Millennials also have been shaped and influenced in their social media use and purchasing behavior. For example, their behavior is influenced and expectations are changed regarding certain products or services, loyalty toward brands or companies, fashion trends, or topics of conversations within consumer groups. The phenomenon also influences the decisions toward organizations and even a whole industry. Therefore, millennials' social media use may significantly influence social norms and the mainstream behavior of society. They are also considered as a harbinger of how people will behave in the future.

Social Norms

The impact of social media is one of the biggest research topics in the field of social cognitive sciences. It is a field of study that investigates the standards of behavior and major beliefs of society, and how these influence information processing in certain situations (Fehr & Fischbacher, 2004). People tend to obey social norms generated by family, friends, colleagues, organizations, and social cultures. The pressure exerted can directly influence one's intentions and change behavior. Social media is one significant factor that could affect social norms (Bolton et al., 2013). Many researchers have used the Theory of Planned Behavior (TPB) as a theoretical structure to predict human behavior. They also have adopted the social norm factor as a predictor of subjective norms (Lu et al., 2010). We could also learn from Lu et al. (2010), who showed that the stronger one's social norms,

the more positive one's attitude turn out to be. In this study, we predicted that social norms would positively affect attitude and subjective norms.

H₁: Social norms derived from social media have a positive effect on subjective norms.
H₂: Social norms derived from social media exert a positive effect on attitude.

Recognition

A departure from the past is noted among millennials in that they will not only search for information on the Internet, but also collect opinions from others on their own initiative. This is due to the development of social media. Moreover, with the availability of the function "like" on social media, users have started to do everything to gain "likes" or receive positive comments. This is noted especially when a person is planning to change a stubborn habit. Therefore, people use social media as a method to get themselves motivated. Recognition is one of the significant motivators according to a previous study (Hamari & Koivisto, 2015). People share and post content on social networking sites and also comment on postings from other people every day. It is not only a way for them to express their thinking, values, and moods, but also is an important medium for them to receive attention and recognition from others, especially from people that they care about (Kim & Um, 2016). By gaining recognition from others, people feel connected with the social community. According to the research of Hamari and Koivisto (2015), social networking sites provide an environment that exposes people to values and comments from others, which unconsciously has a powerful impact on people's attitude toward certain issues or behaviors. Thus, we predicted that recognition influences both subjective norms and attitudes toward exercise intention.

H₃: Recognition received from social media has a positive effect on subjective norms.
H₄: Recognition received from social media has a positive effect on attitude.

Exercise Imagery

Mental imagery is one of the influential tools that can support humans to develop certain behaviors, including learning new languages, skills, or improving performances on particular activities (Giacobbi et al., 2003). A recent study also showed that mental imagery could also exert similar cognitive and motivational effects on exercisers, as well as impacting the behavior of athletes (Giacobbi et al., 2003). Three methods can be used when adopting exercise imagery–namely, energy imagery, appearance imagery, and technique imagery. Energy imagery is about energy building and stress relief, while appearance imagery focuses on body shape building and a healthier appearance. As for technique imagery, it refers to the proper way to engage in exercises. More and more people like to share their fitness progress or fitness-related content and knowledge on social media, such as YouTube, Facebook, or Instagram (Talbot et al., 2017). From the research of Talbot et al. (2017), it is evident that the direct impact of social media on human health and sports imagery is quite significant. There are other studies claiming exercise imagery can evoke the awareness of healthy behavior (Cameron & Chan, 2008). This evidence could lead readers to presume that exercise imagery affects exercise behavior through changing one's attitude toward exercise. Another effect on exercise behavior comes from the increased perception of self-efficacy, often referred to as perceived behavioral control (Giacobbi et al., 2003). With the development of exercise imagery, people are able to build up self-confidence in their participation in exercise activities on account of their enhanced perception of ability to control their exercise. In this study we also predicted that exercise imagery can affect perceived behavioral control.

H₅: Exercise imagery from social media exerts a positive effect on attitude.
H₆: Exercise imagery from social media exerts a positive effect on perceived behavioral control.

Subjective Exercise Knowledge

As mentioned earlier, one purpose of using social media is gaining needed information from other people's content (Zhu & Chen, 2015). Modern people are used to getting knowledge and

information for specific purposes through the Internet–for example, health and exercise-related knowledge. Knowledge of the correct techniques to adopt in exercise routines, without incurring risks, and the required equipment for certain exercise activities are pieces of useful information needed by those about to start exercising (Rhodes et al., 1999). From previous research reports, it is evident that subjective knowledge of certain issues can influence an individual's self-confidence level when undertaking a relevant activity (Brucks, 1985). Social media provides an excellent opportunity for people to gain various kinds of information in different fields (Kwahk & Park, 2016), as well as providing platforms for two-way communication and open-ended feedback. Thus, social media is one of the most important means people use to expand their knowledge in designated areas. The study of Dumitrescu et al. (2011) was used to predict the impact of attitudes, knowledge, and current behavior on oral health behavior. The result of this study showed that knowledge of oral health significantly affected the attitude towards certain behaviors. Another study, conducted by Rhodes et al. (1999), also indicated that gaining enough exercise knowledge to reduce the risk of injury can be an important factor in the initial adoption of exercise by individuals. In a research paper written by Chiou (1998), we can also find a strong connection between certain knowledge and perceived behavioral control of associated behavior. As a result, we also predicted that subjective exercise knowledge has a direct influence on attitudes and perceived behavioral control.

H_7: Subjective exercise knowledge from social media exerts a positive effect on attitude.

H_8: Subjective exercise knowledge from social media exerts a positive effect on perceived behavioral control.

Theory of Planned Behavior

A number of theories have been developed to explain the reasons for changing human behavior. Researchers can conveniently adopt these to determine the most influential factors influencing a particular human behavior (Godin & Kok, 1996). The Theory of Planned Behavior (TPB) is one of the most widely used models and was designed by Ajzen (1991) to understand human behavior as influenced by three motivational factors. That theory was extended using the theory of reasoned action (Godin & Kok, 1996). Many researchers apply TPB to human behavior in a variety of fields, such as behavioral tendencies that contribute to physical and psychological growth. Therefore, TPB is widely used to study the factors influencing people's health behaviors. Hausenblas et al. (1997) and Ahmad et al. (2014) applied TPB to analyze the interrelationship among factors influencing human intentions regarding exercise behavior.

Subjective Norms toward Exercise Intention: In the theoretical framework of TPB, it is understood that subjective norms are the perception of expectations received from important others. From past research, it is known that the opinions or encouragements received from families and friends are very helpful for the development of a behavioral tendency towards exercise (Godin & Kok, 1996). The results of further studies have shown that subjective norms, or social pressure, has a significant effect on intention (Ahmad et al., 2014). This present study assumed that subjective norms have a direct impact on exercise intention.

H_9: Subjective norms exert a positive effect on regular exercise intention.

Attitude toward Exercise Intention: It is known from TPB that attitude is the most important factor in people's behavioral intentions, so it can be considered the basis of this theory (Ajzen, 1991). It has been confirmed from past studies that there is a direct correlation between attitudes and behavioral images (Hausenblas et al., 1997; Godin & Kok, 1996). If persons have a more positive attitude towards sporting activities, they will also have a higher tendency to exercise. Previous findings have also indicated that attitudes help increase a person's health behavioral intention (Povey et al., 2000). Hence, in this study we also adopted this concept in the research structure.

H_{10}: Attitude exerts a positive effect on regular exercise intention.

Perceived Behavioral Control toward Exercise Intention: Many people cannot start or maintain specific athletic behavior because they think it is a difficult task that they cannot do on their own. Many previous studies have pointed out that perceived behavioral control has a particularly significant influence on intention concerning a particular behavior (Godin & Kok, 1996; Hausenblas et al., 1997; Povey et al., 2000). And it can also change one's attitude toward a certain behavior (Ajzen, 1991). In this study, we considered that perceived behavioral control directly affected exercise intention.

H_{11}: Perceived behavioral control has a positive effect on regular exercise intention.

The theoretical framework for this research study, which incorporates the hypotheses generated, is illustrated in Figure 1; the operational definitions and other features used are shown in Table 1.

Figure 1 *Theoretical Framework Adopted*
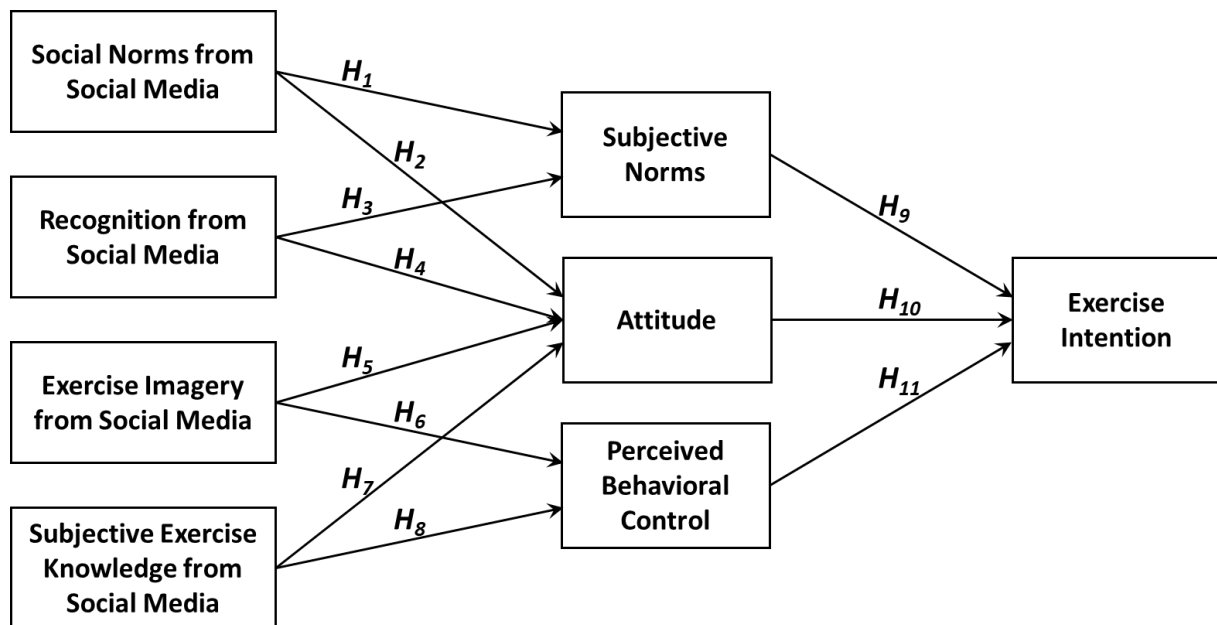
Table 1 *Definitions and Operational Definitions of Variables Used in This Study*

Variables	Definition	Operational Definition
Social Norms from Social Media	Standards of behavior that are based on widely shared beliefs concerning how individual group members ought to behave in a given situation. (Fehr & Fischbacher, 2004)	Standards of behavior on how individual group members ought to behave in doing exercises that are based on widely shared beliefs from social media.
Recognition from Social Media	The value that a participant derives from gaining acceptance and approval from other members. (Hernandez et al., 2011)	The value that a social media user derives from gaining acceptance and approval from other members' replies or comments toward their postings on social media.
Exercise Imagery from Social Media	Creation/re-creation of an experience generated from memorial information; has quasi-sensorial, quasi-perceptual, and quasi-affective characteristics; is under the imager's volitional control, and may occur in the absence of real stimulus antecedents normally associated with an actual experience. (Morris et al., 2005)	Creation or re-creation of an exercise experience generated from memorial information from social media; has quasi-sensorial, quasi-perceptual, and quasi-affective characteristics; is under the imager's volitional control, may occur in absence of real stimulus antecedents normally associated with an actual exercise experience.

Table 1 *Definitions and Operational Definitions of Variables Used in This Study (Cont.)*

Subjective Exercise Knowledge from Social Media	Individuals' perceptions of how much they know. (Park & Lessig, 1981)	Individuals' perceptions of how much they know about an exercise that was gained from social media.
Subjective Norms	An individual's perception of the likelihood that the potential referent group or individuals approve or disapprove of performance of a given behavior. (Fishbein & Ajzen, 1977)	An individual's perception of the likelihood that the potential referent group or individuals will approve or disapprove of regular exercise.
Attitude	The evaluative effect of a positive or negative feeling of individuals in performing a particular behavior. (Fishbein & Ajzen, 1977)	The evaluative effect of positive or negative feelings held by individuals involved in regular exercise.
Perceived Behavioral Control	Given the presence or absence of requisite resources and opportunities, such control involves the individual's perception of the ease or difficulty in performing the behavior of interest. (Ajzen, 1991)	Given the presence or absence of requisite resources and opportunities, the individual's perception of the ease or difficulty in undertaking regular exercise.
Exercise Intention	The perception an individual holds towards performance of a particular behavior. (Fishbein & Ajzen, 1977)	The perception of an individual towards regular exercise.

Research Methodology

Millennials in Taiwan were the target group of this study. The researchers collected data through online surveys (Google forms) from different social networking sites that were set up for students in colleges or members of fitness centers in Taipei city. The target group included young adults whose age was from 20 to 40 and with different educational levels, occupations, and salaries. Using the advice of Ajzen (2006), qualitative data was collected first from a representative population sample to enable the refinement of the questionnaires. Hence, a pilot test was completed on 30 individuals to identify the validity and reliability of the measurement items.

The questionnaires were developed according to the standard methodology used for TPB components (Ajzen, 2006). Five to six items were formulated to assess each of the major constructs in the theory. A five-point Likert scale was used to measure different perceived response levels. English and Chinese versions of the questionnaire were developed. The back-translation technique was applied in questionnaire development to ensure that both the English and Chinese versions of the questionnaire assessed the same concept. For the main study, the questionnaires were distributed among 484 respondents. Finally, 440 responses were used for data analysis after removing invalid questionnaire returns.

The final data analysis was completed in three steps. First, Cronbach's Alpha was calculated to make sure the reliability of all scale items performed well. Second, the data was analyzed using Confirmatory Factor Analysis (CFA) to assess the validity of the instruments. For the last step, Structural Equation Modelling (SEM) techniques were used to analyze the conceptual model (Figure 1) and the appropriateness of the suggested hypothesis paths.

Analysis Results

Since the data and materials were collected from open cyberspace, it was necessary to identify the demographic characteristics of the respondents. Factors included in the survey instrument were gender, age group, occupation, marital status, highest education level, and frequency of exercising per week. For the aspect of gender, females accounted for 62%, which was higher than for males (38%). After deleting invalid responses from people not from the target group (people aged between 20 and 40), the respondents were divided into four age groups—20 to 24, 25 to 29, 30 to 34, 35 to 40. Among these, 20 to 24 and 25 to 29 accounted for the top two age groups. All but 10% of

respondents were single. In terms of occupation, students constituted the largest category of respondents (33%). When it came to education level, most respondents were at the undergraduate level (67%), while others were master's degree level or above (31%). A few were at the high school level or below (2%).

According to the definition of regular exercise, people should exercise at least three times a week and thirty minutes each time. Hence, the research also categorized the frequency of the exercising time of respondents. We found that 35% of respondents exercised three or more times per week, which matched the definition of regular exercise. As for respondents who exercised one or two times per week, both groups together accounted for 26%. Only 13% of respondents exercised less than once per week.

Cronbach's alpha was adopted to make sure the reliability of all the scale items performed well. The results are shown in Table 2 below. All of the variables were higher than .70, which was represented as a valid outcome.

Table 2 *Cronbach's Alpha Reliability Results of Framework Scale*

Variables	Cronbach's Alpha	Number of Items
Social Norms from Social Media	.718	5
Recognition from Social Media	.873	5
Exercise Imagery from Social Media	.863	6
Subjective Exercise Knowledge from Social Media	.815	5
Subjective Norm	.739	5
Attitude	.838	6
Perceived Behavioral Control	.890	5
Intention	.937	5

Confirmatory Factor Analysis (CFA) was applied to analyze the three constructs mentioned in the model—independent variables (social norms, recognition, exercise imagery, and subjective exercise knowledge), mediators (subjective norms, attitude, and perceived behavioral control), and dependent variables (intention). The model was modified according to the modification index obtained from the CFA results. Finally, 40 scale items were used to measure eight variables. Most measurement model details fitted with the key criteria based on the overall results of CFA; only the Chi-square (χ^2) ratio of mediators construct (3.30) did not fit with the criteria (Table 3). However, from the study of Hair et al. (2006), the Chi-square ratio is sensitive to sample size, especially when the sample size is more than 200. Thus, it is recommended not to rely solely on the Chi-square statistics, but also on other indices as well. Accordingly, the indexes of the three constructs reached the standardized level to indicate the model's goodness of fit.

Table 3 *Summary of Confirmatory Factor Analysis Results*

Items	χ^2/df	GFI	CFI	RMSEA	SRMR
Criteria	<3	>.90	>.90	.05–.08	<.08
CFA of Independent Variables	2.28	.92	.95	.05	.03
CFA of Mediators	3.30	.92	.93	.07	.04
CFA of Dependent Variables	1.39	.99	.99	.03	.01

Note. GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual

Structural Equation Modeling (SEM) was applied to investigate the hypothesized relationships among variables. The goodness of SEM fit indices for the model are shown in Table 4; they met the standardized values. To ensure a good model, the χ^2/df index should be lower than three (Bryne, 2016). From the suggestion of Hair et al. (2014), GFI values should be higher than .90, and those of CFI should also be higher than .90. If the RMSEA values fall between .05 and .08, an acceptable fit to

the model is indicated. As for SRMR, the values obtained should ideally exceed .08 (Hu & Bentler, 1999). Thus, according to the results obtained, the data fitted into the model well.

Table 4 *Summary of Structural Equation Modeling Results*

Model Fit	Criteria	SEM Model
χ^2/df	< 3.00	2.12
GFI	> .90	.91
CFI	> .90	.95
RMSEA	.05–.08	.05
SRMR	< .08	.05

The results of hypothesis path testing are presented in Table 5; eight hypothesized relationships were accepted and three were rejected. The influence of social norms was quite significant on both subjective norms ($p < .001$) and attitude ($p < .01$), thus supporting H_1 and H_2. Subjective exercise knowledge also had significant effects on attitude ($p < .001$) and perceived behavioral control ($p < .001$); hence H_7 and H_8 were supported. We can also learn that intention was significantly influenced by subjective norms ($p < .05$), attitude ($p < .001$), and perceived behavioral control ($p < .001$); as a result, H_9, H_{10} and H_{11} were also supported. As for recognition, it exerted a significant influence on subjective norms ($p < .001$), but not on attitude ($p > .05$). Therefore, H_3 was supported, but H_4 was rejected. Finally, exercise imagery was revealed to have significant negative impacts on both subjective norms ($p < .05$) and attitude ($p < .01$). As a consequence, H_5 and H_6 were not supported.

Table 5 *Summary of Hypothesis Path Testing Results*

	Hypothesis Path	Beta	CR	Sig. (*p*)	Testing Result
H_1	Social Norms → Subjective Norm	.38	5.18	***	Supported
H_2	Social Norms → Attitude	.27	2.81	.005**	Supported
H_3	Recognition → Subjective Norm	.20	3.31	***	Supported
H_4	Recognition → Attitude	.10	0.94	.349	Not Supported
H_5	Exercise Imagery → Attitude	-.53	-2.48	.013*	Not Supported
H_6	Exercise Imagery → Perceived Behavioral Control	-.92	-3.15	.002**	Not Supported
H_7	Subjective Exercise Knowledge → Attitude	1.02	5.99	***	Supported
H_8	Subjective Exercise Knowledge → Perceived Behavioral Control	1.70	5.52	***	Supported
H_9	Subjective Norm → Intention	.09	2.25	.024*	Supported
H_{10}	Attitude → Intention	.23	3.46	***	Supported
H_{11}	Perceived Behavioral Control → Intention	.61	8.84	***	Supported

*Note. *$p < .05$, **$p < .01$, ***$p < .001$

Discussion

This study was carried out to consider two main research objectives. The first objective was to examine the factors operating through social media that influenced millennials' subjective norms, attitude, and perceived behavioral control concerning exercise. The results revealed the significant influence that social norms have on millennials' subjective norms and attitude toward exercise. Hence, H_1 and H_2 were supported by the findings and were also aligned with Lu et al.'s (2010) study, where it was claimed that the stronger one's social norms were, the greater one's subjective norms and positive attitude would be. According to our analyses, hypotheses H_7 and H_8, were consistent

with Dumitrescu et al. (2011) and Chiou's (1998) studies, which indicated that attitude, as well as perceived behavioral control, could be influenced by subjective knowledge. As for recognition, the results revealed significant influence on subjective norms, while the opposite was found for attitude. The findings supported H_3 (recognition from social media has a positive effect on subjective norms), which was also supported by Kim & Um's (2016) study. But the data did not support H_4 (recognition from social media has a positive effect on attitude) and hence were contrary to the study of Hamari & Koivisto (2015). It is assumed that millennials' attitude toward exercise may not be influenced by gaining recognition from social media. But receiving feedback from other people may generate millennials' perception of the likelihood that their potential referent group or individuals approve of regular exercise. Lastly, exercise imagery was the only factor that was verified as negatively influencing both attitude and perceived behavioral control. The findings were not consistent with Giacobbi et al.'s (2003) study. As a result, H_5 and H_6 were not supported. From the study of Pearla et al. (2015), it is suggested that this phenomenon might result from low self-esteem or body dissatisfaction among those who have had previous experience with weight stigmatization. The research of Robinsona et al. (2015) also suggests that athletic images might oversell the attainability of ideal body shape through fitness planning. Thus, it might cause failure to maintain a healthy lifestyle while increasing pressure to exercise.

The second objective was to investigate how subjective norms, attitude, as well as perceived behavioral control, affected exercise intention among millennials. The evidence showed that millennials' subjective norms, attitude, and perceived behavioral control significantly and positively influenced their exercise intention. Therefore, H_9, H_{10} and H_{11} were all supported by the results and were also in line with previous studies (Ajzen, 1991; Ahmad et al., 2014; Povey et al., 2000).

Theoretical Contribution and Managerial Implications

This study contributes to the literature examining the influence of social media on people's intention toward exercising. The framework of the study extended the Theory of Planned Behavior by applying four different factors (social norms, recognition, exercise imagery, and subjective exercise knowledge) in investigating how social media influences one's exercise intention in different psychological dimensions. Lastly, the impact of social media was shown to be significant on the exercise intention of Taiwanese millennials.

The findings from the study can be helpful in developing a comprehensive Social Media Marketing program to raise millennials' exercising intention and further promote fitness activities. Specifically, marketing managers may consider four different influential factors being used in the social media. According to the results, in order to increase the subjective norms of millennials, marketers should firstly focus on generating social norms of exercise or fitness-related activities. From Wainaina's (2019) study, people rely heavily on information from social media and electronically conveyed "word of mouth." It is also influential in the adoption of fitness or health behaviors. Social media also has helped build fitness communities by attracting new members. Fitness influencers are considered to be an important element when making marketing plans (Wainaina, 2019). Marketers should also consider the power of Internet celebrities as part of the marketing strategy to create enhanced social norms toward exercise issues.

Secondly, once millennials gain substantial recognition from their postings on social media, their subjective norms may also be improved. Thus, Hirscha and Sundar's (2015) study suggested encouraging users to provide more fitness-related content on social media to increase their involvement and interest toward such activities. Marketers should encourage millennials to share their own experiences or fitness-related content from other individuals or groups. It is necessary to increase the subjective exercise knowledge of millennials to increase their perceived behavioral control toward exercise. According to Wainaina's (2019) study, content with good qualities leads to more active engagement toward fitness activities. The audience suggested that information should be valuable and user-generated so that they can mostly rely on social media as the main source of fitness information. Besides, content generators also are urged to update information constantly,

and they should also respond to questions from the audience quickly and efficiently. Thus, marketers should also be careful in their social media content planning. With the increase of social norms and subjective exercise knowledge, millennials' attitude might also be positively influenced.

Lastly, the results of this study showed that exercise imagery has no positive impact on exercise intention. However, from the study of Raggatt et al. (2018), it is evident that the influence of fitness-related images can be different depending on how images are presented. If the images emphasize ideal appearance, not the benefit of fitness, it might cause low self-esteem and body dissatisfaction for audience members. As a result, marketers should carefully choose images or description on social media.

Limitations and Recommendations

There were some limitations inherent in this study. The population of this study only targeted millennials in Taiwan, and the age range was from 20 to 40 years old. The study did not compare different generations. In terms of occupation, students were the largest category of respondents. These factors impose some limits on making generalizations in regards to the findings. In addition, the research results are only representative of people in Taipei, Taiwan where the study was conducted. The study also did not consider different kinds of social media platforms; this might represent a barrier to the identification of distinctive effects from different social network sites. Future researchers might consider enlarging the scope of investigation to survey different age groups, especially different generations. It is also recommended that research be conducted in different countries to compare different geographical features and also incorporate different cultural backgrounds. Besides, researcher could also conduct a comparative survey involving different kinds of social media platforms.

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